DOCUMENT RESUME

ED 119 551 HE 007 244

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TITLE The Myth of Equal Access in Public Higher Education.
INSTITUTION Southern Education Foundation, Atlanta, Ga.
SPONS AGENCY Ford Foundation, New York, N.Y.
PUB DATE Jul 75
NOTE 32p.; Paper presented at the conference on Equality of Access in Postsecondary Education (Atlanta, Georgia, July, 1975)
AVAILABLE FROM Southern Education Foundation, 811 Cypress Street, N.E., Atlanta, Georgia 30308 ($2.00)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage
DESCRIPTORS Community Colleges; *Educational Assessment; Educational Objectives; *Equal Education; Expenditure Per Student; Family Income; *Higher Education; Junior Colleges; *Minority Groups; Post Secondary Education; *Public Policy; Student Characteristics; Student Financial Aid; Tables (Data)

ABSTRACT

Equal access in public higher education is discussed because the public system is more susceptible to modification through changes in public policy. Related issues are: (1) selectivity of public institutions; (2) student characteristics; (3) educational resources and benefits; (4) student financial aid; (5) educational expenditures; and (6) educational goals. The issues of admissions and access cannot be resolved without a more careful consideration of the desired objectives of the higher educational system. Regardless of what our objectives might be, the existing hierarchical public systems do not present a set of opportunities that are even remotely equal for all students. (Author/KE)

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THE MYTH OF EQUAL ACCESS IN PUBLIC HIGHER EDUCATION

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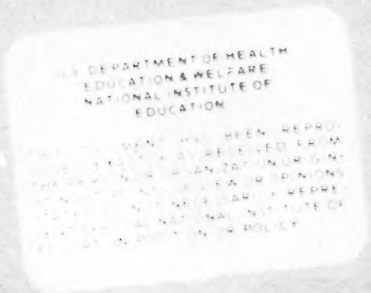

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FOREWORD

The Southern Education Foundation presents here a paper by Dr. Alexander W. Astin that was prepared for the conference on Equality of Access in Postsecondary Education. This conference, which was held in Atlanta on July 17, 18, and 19, 1975, was jointly sponsored by SEF and the Ford Foundation. Dr. Astin's paper is one of several commissioned for the conference. The paper is reproduced here from Dr. Astin's original manuscript and has not been edited by SEF.

A summary of the conference by John Egerton has been published under the title "Equality of Access in Postsecondary Education." Additionally, SEF has printed and distributed a paper from the conference by Dr. James E. Blackwell, entitled "Access of Black Students to Graduate and Professional Schools." A paper on financial aid also will be printed.

Copies of the Egerton report are available from SEF without cost; the Astin paper and the other papers will be available at a cost of $2.00 each.

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The Myth of Equal Access in Public Higher Education

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American higher education is generally regarded as the most accessible postsecondary educational system in the world. Since the Morrill Act of 1862, the system has expanded to the point where virtually every state has open access institutions, and where more than half of the high school graduates go directly on to some form of additional education. Recent evidence, however, suggests that this impressive numerical expansion is misleading, and that the concept of "equal access" may be more of a myth than a reality.

One difficulty with popular notions of equality of opportunity is the terminology itself. Many legislators and policy makers are content to define "access" simply in terms of the student's being able to enroll somewhere. If institutions were roughly equivalent in their resources and offerings, that definition would probably make sense. However, institutions are by no means equivalent and the student's future may depend as much on the kind of institution attended as on attendance versus nonattendance. Indeed, with the proliferation of public community colleges and the substantial resources of financial aid now available to needy students, the real issue of access is not who goes to college, but who goes to college where.

Persons concerned with expanding access would be well advised to resist such simple definitions. Rather, legislators and policy makers should be encouraged to take a more critical look at what has been somewhat euphemistically called "diversity," and to examine the consequences of current admissions policies in terms of such diversity.

To put institutional diversity in a somewhat different light, it

is possible to argue that higher education in the United States has evolved into a highly refined institutional status hierarchy. Like most status systems, it comprises a few elite and widely known institutions, a substantial middle class, and a large number of relatively unknown institutions. While most people are familiar with the hierarchical nature of private higher education--with a few prestigious private universities occupying the top positions--it is not always recognized that a similar hierarchy exists within many public systems. Unlike the private hierarchy, which evolved more or less by historical accident, the hierarchies within the public systems were developed as part of a conscious plan. The analysis reported here focuses mainly on this public system, not because the private system is unimportant, but rather because the public system is presumably more susceptible to modification through changes in public policy.

The Public Hierarchy

Table 1 shows the 1,326 public institutions in the U. S. separated into seven groups. More than three-fourths of the new college students (77.5 percent) enroll initially in public institutions. Of these, half go to junior colleges and the other half are about equally divided between the four-year colleges and the universities. The four-year colleges and universities have been separated into "selectivity" levels based on estimates of the average admissions test scores of their entering students. The significance of these institutional categories for student access is clear: (1) Virtually all students are eligible to enroll at public two-year colleges; (2) four-year colleges (particularly the most selective ones) are often not open to all students; and (3) the universities are usually the most selective in admissions. While not all cities and states have such a hierarchical system, this three-tier arrangement has increasingly become the model for

Table 1

Public Institutions in the United States

(1974-75)

Type	First Time Freshmen	
	N	% of Total Population
Two-Year Colleges (N=867)	637,367	38.1
Four-Year Colleges*		
Low selectivity (N=198)	170,396	10.2
Medium selectivity (N=66)	72,956	4.4
High selectivity (N=73)	98,495	5.9
Universities**		
Low selectivity (N=74)	177,613	10.6
Medium selectivity (N=31)	85,876	5.1
High selectivity (N=17)	53,906	3.2

*Medium selectivity includes institutions enrolling students with mean SAT V+M between 900 and 1,000 (or ACT composite between 18 and 22); high selectivity includes institutions with means above 1,000 (ACT composite above 22).

**Medium selectivity includes institutions enrolling students with mean SAT V+M between 1,000 and 1,150 (ACT composite between 23 and 25); high selectivity includes institutions with mean SAT V+M above 1,149 (ACT composite above 25).

public systems. Note also that this institutional hierarchy in the public sector assumes the shape of a pyramid: nearly half of the students enroll at the least selective two-year colleges, whereas only one-tenth enroll at the most selective universities.

What kinds of students end up attending these seven types of institutions? Table 2 summarizes three selected attributes of new freshmen entering each type in 1973: the percentage with high grades in high school (defined as an average of B+ or better), the percentage of minority students, and the median income level of the students' parents. Differential admissions selectivity is clearly demonstrated by the percentages of entering students with high grades: Only 21 percent of those entering two-year colleges had high grades in high school, as contrasted with 69 percent of those entering the most selective universities.

The distribution of minority students shows the opposite pattern: minority students are most highly concentrated in the two-year and the least selective four-year institutions, and concentrated least in the universities.

The last column in Table 2 shows the students' median income levels. Again, we observe a clear-cut progression, with the more affluent students tending to enroll in institutions at the top of the hierarchy and the poorest students gravitating toward the bottom of the hierarchy.

These data on minority enrollments and income levels highlight one of the consequences of a hierarchically arranged system based on traditional selective admissions policies: low income and minority students tend to be disproportionately concentrated in institutions at the bottom of the hierarchy.

While none of these findings is especially startling, most policy

Table 2

Characteristics of New Freshmen Entering

Different Types of Public Institutions

(Fall 1973)

Type of Institution	Percent Students with High School Averages of B+ or higher	Percent Minority* Students	Medium Parental Income
Two-year colleges	21.3	11.8	$12,195
Four-year colleges			
Low selectivity	39.9	18.7	$13,427
Medium selectivity	33.0	6.9	$14,055
High selectivity	58.5	4.8	$15,695
Universities			
Low selectivity	49.9	4.1	$16,590
Medium selectivity	51.1	2.4	$15,510
High selectivity	69.3	5.4	$17,843

*Includes black, Spanish, and native American Indian students.

Source: The American Freshman: National Norms for Fall 1973 (A. W. Astin, M. R. King, J. M. Light, and G. T. Richardson; Laboratory for Research on Higher Education, UCLA, 1973).

makers have probably not really considered the possible consequences of such policies for the students involved. What difference does it make, for example, if a student attends a highly selective public university rather than a two-year college? Will the student receive an equivalent educational experience? How comparable are the educational resources of the various institutional types? And what about the student's chances of completing a degree program? Are they equivalent in each type of institution?

Differential Resources

These questions can be explored by comparing the seven types of institutions in terms of the resources, facilities, and other benefits available to the student (Table 3). The first resource measure shown in Table 3 is "educational and general" expenditures--an attribute generally regarded as the best single measure of the institution's investment in its educational program. (It should be noted that this measure does not include funds from externally funded research projects, auxiliary enterprises, etc.) To compensate for differences in institutional size, each institution's educational and general expenditures has been divided by the total FTE student enrollment to yield a "per student" measure. These per student expenditures follow the hierarchical pattern exactly, with the lowest expenditures occurring in the two-year and nonselective four-year colleges and the largest expenditures occurring in the selective colleges and universities. The magnitude of these differences is remarkable: selective universities spend more than three times more per student than the least selective four-year and two-year colleges. These figures show that students entering the selective public institutions will probably be exposed to a more substantial educational program than students entering

two-year and nonselective four-year colleges.

An identical and equally dramatic pattern occurs with the second measure: per student value of buildings, land, and equipment. As with educational and general expenditures, these resources in the most selective universities exceed those in the two-year colleges by more than 3 to 1. Thus, entering students at the more selective institutions are likely to be exposed to better physical plants, laboratories, and other facilities than students entering less selective institutions.

The third measure of institutional resources is the per student expenditures for libraries. Once more, the same pattern occurs, with expenditures at the top of the institutional hierarchy exceeding those at the bottom by about 3 to 1.

One might argue that these three measures are somewhat misleading in the case of institutions that also have graduate programs, since graduate education is generally regarded as more costly than undergraduate education. Thus, the per student figures may give an inflated picture of the amounts actually invested in undergraduate education by certain institutions. In order to compensate for these differential expenditures, the first three measures in Table 3 were recomputed counting each graduate or professional student as the equivalent of 2.5 undergraduates.* These weighted figures are shown in the next three columns of Table 3. As expected, the per student figures in the universities show the greatest decline. Even so, the per student expenditures in the most selective institutions still exceed those in the least selective by more than 2 to 1.

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*One could also argue, of course, that such adjustments are inappropriate for measures such as laboratory and library expenditures, since undergraduates usually have access to such facilities, even if they are supported disproportionately by the graduate and professional schools.

Table 3

Educational Resources and Benefits of Different Types of Public Institutions

Type of Institution	Dollars Per FTE Student			Weighted[a] Dollars Per FTE Student			Median Faculty Salary[c]	Percent Freshman Living in Residence Halls[d]	Effects on Chances of Persistence[e]
	Educational & General Expenditures[b]	Value of Buildings, Land, and Equipment[b]	Library Expenditures[b]	Educational & General Expenditures[b]	Value of Buildings, Land, and Equipment[b]	Library Expenditures[b]			
Two-year colleges	1,533	3,982	71	1,533	3,982	71	13,734	10.3	-12%
Four-year colleges									
Low selectivity	1,534	5,514	83	1,485	5,349	80	13,765	56.7	
Medium selectivity	1,758	6,467	98	1,703	6,263	96	14,794	68.5	+ 4%
High selectivity	2,523	7,875	104	2,351	7.292	96	16,508	89.6	
Universities									
Low selectivity	3,101	7,710	109	2,570	6,431	93	15,662	71.8	
Medium selectivity	3,230	8,453	116	2,655	6,991	96	16,846	91.7	+ 1%
High selectivity	5,408	12,320	212	4,157	9,495	165	18,286	97.0	

[a]The greater cost of graduate and professional education has been discounted by weighting each graduate student by a factor of 2.5

[b]From 1971-72 Higher Education General Information Survey.

[c]From 1973 AAUP survey.

[d]From A. W. Astin, M. R. King, J. M. Light, G. T. Richardson, The American Freshman: National Norms for Fall 1974 (Graduate School of Education, UCLA, 1974).

[e]From A. W. Astin, Preventing Students from Dropping Out (Jossey-Bass, 1975). Percentages indicate impact of institutional type on student's chances of persistence defined as the actual persistence rates minus expected rates based on entering students' abilities, aspirations, and background characteristics.

The next measure in Table 3 is the median faculty salary. The data reveal a strong correlation between selectivity and the median salary paid faculty. If better faculty tend to command higher salaries, it seems reasonable to conclude that students who are able to attend more selective public institutions are exposed to a faculty that is generally superior to faculty in the less selective institutions.

The next measure shown in Table 3 is the percent of new students who live in college residence halls. This measure is included as an educational "benefit" because recent evidence has shown that significant advantages accrue to those students who go away from home to live on the college campus during their freshman year. These benefits include increased satisfaction, increased motivation, greater contacts with faculty and students, and increased chances of persistence (Astin, 1973, 1975; Chickering, 1974). The magnitude of the differences in this variable is remarkable: nearly all students entering the most selective public universities live in residence halls during their freshman year, whereas only one freshman in ten entering a two-year college has this opportunity.

The last "benefit" measure in Table 3 concerns the impact of the different institutional types on the student's chances of finishing a degree program. These data, which are taken from a recent national study of college attrition (Astin, 1975), are based on the difference between the actual dropout rate and the rate that would be expected given the characteristics of students who enroll. (Since the study was not conducted separately within selectivity levels, only the results for the three major institutional types are shown here.) It should be stressed that these findings were based only on students who began college aspiring to a baccalaureate degree. The study took into account entering student

differences in initial abilities, aspirations, motivations, career plans, personality, and study habits. Attending a two-year institution reduces the student's chances of finishing by approximately 12 percent. Somewhat surprisingly, the increase associated with attending a four-year public institution is slightly greater than the increase associated with attending a public university. One possible explanation for this finding is that the university may have more stringent academic standards than the four-year college. Analyses not shown here (Astin, 1975) indicate that the reduced chances of completing a degree program at the community college are due in part, but not entirely, to the absence of residential facilities at such colleges.

In summary, the data in Table 3 suggest that gaining "access" to a public institution may not represent an "equal educational opportunity" for different students. Those who manage to gain admittance to the most selective universities are exposed to much richer resources, better facilities and libraries, and a higher quality faculty than those who attend two-year or the nonselective four-year colleges. Students who gain access only to the two-year colleges are also denied the benefits of residential living and have substantially decreased chances of completing their degree programs.

Who Pays?

A somewhat different measure of "equality" of opportunity is who pays what part of the costs. Is the financial burden of attending public institutions borne equally by students attending the different institutional types? To examine this question two additional measures were computed: per student expenditures for financial aid, and average tuition charges (Table 4). These data reveal substantial differences in institutional expenditures for student financial aid. Again, the differences follow the

Table 4

Financial Aid, Tuition, and Student "Subsidy" in Different Types of Public Colleges

(Dollars Per FTE Student)

Type of Institution	Expenditures for Financial Aid	Tuition	"Subsidy" (Educational & General Plus Aid Expenditures Minus Tuition)
Two-year colleges	60	385	1,208
Four-year colleges			
Low selectivity	77	358	1,253
Medium selectivity	94	404	1,448
High selectivity	129	473	2,179
Universities			
Low selectivity	133	490	2,744
Medium selectivity	190	564	2,850
High selectivity	316	519	5,205

hierarchical ordering precisely, with more than five times more dollars per student being spent by the most selective as contrasted to the least selective colleges. While tuition differences follow the same hierarchical ordering, it is important to note two important qualifications. First, although the least selective four-year and two-year colleges charge the lowest fees, charges in the most selective universities are only slightly more: less than $200 per year. In addition, the most selective public universities actually charge somewhat less than the moderately selective public universities, in spite of their substantially greater expenditures and resources (Table 3).

The final measure shown in Table 4 indicates the extent to which institutions subsidize the student's educational costs. This subsidy is approximated by adding the amount expended for educational and general purposes to the amount expended for student financial aid, and by then subtracting tuition. The net difference shows how much the institution subsidizes the student's educational costs. Once again, the subsidy follows precisely the hierarchical ordering of institutions, with the smallest subsidy being in the two-year colleges and by far the largest being in the most selective universities.

These discrepancies in financial aid and net subsidy are especially ironic, given the substantial differences in median income levels shown earlier (Table 2). Thus, the subsidy is smallest in those institutions enrolling the poorest students, and greatest in those institutions enrolling the most well-to-do students. In one sense, these data provide strong support for the notion that "them that has, gets." More important, they show clearly that "educational opportunity," as measured by the amount contributed to that student's education through public funds, is by no means

equivalent in different types of public institutions. Here again is another important side effect of a hierarchically arranged public system based on selective admissions: students who are denied access to the universities and more selective four-year colleges (including a disproportionate share of the low-income and minority students) receive substantially less public subsidy for their postsecondary education than do students who manage to enter the more selective public colleges and universities.

Do Southern Institutions Follow the National Pattern?

Table 5 shows some of the same data separately for public institutions located in 7 southern states (Arkansas, Georgia, Florida, Louisiana, Mississippi, Maryland, North Carolina, Oklahoma, and Virginia). (Because the high and middle selectivity levels included only two universities each, these two categories have been combined.) As was the case with institutions nationally, each measure correlates closely with institutional selectivity.

One interesting feature of the southern data is the great diversity amoung the four-year colleges. The least selective colleges in this group, for example, actually spend somewhat less per student for libraries than do the community colleges, whereas the most selective four-year colleges spend more on libraries than even the universities. (One should keep in mind, however, that the university figures have been deflated somewhat by the 2.5 weight applied to graduate and professional students.) A similar degree of diversity exists within the four-year colleges with respect to their physical plants and tuition charges.

The southern data for tuition and financial aid show that the average net cost of attending a selective southern university is lower than the cost of almost any other type of public institution in the South except the two-year college (which is only some $84 cheaper), despite the

Table 5

Financial Data for Public Institutions in the South[a]

Type of Institution	N	Weighted[b] Dollars Per FTE Student: Educational & General Expenditures	Value of Buildings, Land, and Equipment	Library Expenditures	Financial Aid	Tuition	Mean Per Student Subsidy[c]
Two-year colleges	144	1,665	4,165	89	50	261	1,454
Four-year colleges							
Low selectivity	34	1,371	4,866	78	64	358	1,038
Medium selectivity	7	1,751	7,350	99	65	397	1,419
High selectivity	9	2,068	10,041	124	98	658	1,508
Universities							
Low selectivity	10	2,441	5,892	83	108	511	2,038
Medium and high selectivity	4	3,283	6,857	99	163	458	2,988

[a]Arkansas, Georgia, Florida, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, and Virginia.

[b]Graduate and professional students are weighted by a factor of 2.5.

[c]Educational and general expenditures plus financial aid minus tuition.

very high expenditures per student in these universities. These facts are further reflected in the mean per student subsidy (last column in Table 5), which parallels the hierarchical ordering of institutions almost exactly (the only exception again being the two-year colleges, which involve a somewhat higher subsidy than the least selective four-year colleges).

In short, these data show that public institutions in the South are organized into a hierarchical pattern of differential resources and expenditures that very closely resembles the national picture.

Why A Hierarchy?

Although many educators have developed elaborate educational rationales for institutional hierarchies based on selective admissions ("an institution for every type of student"), it is probably safe to assume that the system is perpetuated less for educational reasons than for reasons of competition and status. University professors support selective admissions because high achievers are more fun and easier to teach. Indeed, even within a given university, or within a given classroom, professors probably favor their best students. Alumni, legislators, faculty, administrators, and probably a great many students support selective admissions because bright students enhance the prestige of the institution. University administrators probably support selective admissions because having a good input of highly motivated and talented students will almost guarantee a good output of distinguished and possibly wealthy alumni in years to come. The secondary schools support the track system that results from selective admissions because they see it as a reward or incentive system for motivating their students: teachers and guidance counselors can frequently be heard to tell their students to "study hard so you can get into a 'good' institution."

There are also important educational defenses for a tiered or hierarchical system. Perhaps the most common justification is that students will develop better academically if they are grouped with students of similar ability. This assumption has several important corollaries: (1) that bright students need the stimulation and competition of each other in order to realize their full potential; (2) that bright students will become bored and apathetic if grouped with students of lesser ability; and (3) that the mediocre student will become intimidated and discouraged if forced to compete with bright students. Although amazingly little research has been done to test these assumptions, the available evidence offers virtually no support. Thus, as far as learning outcomes are concerned, there seems to be little or no interaction between the selectivity of the institution and the ability of the student.* Although this evidence is by no means the final word on the question of how selectivity interacts with student ability, it does suggest that certain widely held assumptions about tracking may be wrong.

Another argument commonly made in defense of selective admissions is that any relaxation of admissions standards would lower the institution's "academic standards." While such a consequence is indeed possible, it is by no means inevitable. The traditional view is that academic standards are determined primarily by the abilities of the students who are admitted. This bit of folklore may apply to institutions that grade strictly on the curve, but there is no reason why colleges cannot set any standards they

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*A. W. Astin, "Undergraduate Achievement and Institutional 'Excellence," Science, 1968, pp. 661-668; Robert C. Nichols, "Effects of Various College Characteristics on Student Aptitude Test Scores," Journal of Educational Psychology, 1964, p. 45-54; Donald A. Rock, John A. Centra, and Robert L. Linn, "Relationships Between College Characteristics and Student Achievement," American Educational Research Journal, Vol. 7, 1970, p. 109-122.

wish, independent of their admissions practices. Academic standards have to do with the performance levels required before the institution will certify that the student has passed certain courses or completed certain requirements for the degree. Even though fewer students are likely to succeed (be certified) if very high performance levels are required at the same time admissions criteria are relaxed, such standards can still be defined and maintained whatever changes are made in the admissions process.

If one accepts the idea that colleges exist in order to educate, then the model of selective admissions based on test scores and prior grades makes little sense. If an institution exists to educate students, then its mission is to produce certain desirable changes in students or, more simply, to make a difference in the student's life. This kind of "value added" approach to the goals of higher education suggests that admissions procedures should be designed to select students who are likely to be influenced by the educational process, regardless of the student's entering level of performance. Instead, admissions officers in selective institutions function more like race track handicappers: they try merely to pick winners. By looking over the various candidates and evaluating their respective talents, those who are likely to perform well are selected. Handicappers, it should be stressed, are interested only in predicting the horse's performance, not in helping it to run better and faster. The problem here is that an educational institution should function not like a handicapper, but like a jockey or trainer: it has the responsibility of improving the performance of the student, not just of identifying those with the greatest potential.

In another sense, college admissions officers tend to operate like personnel managers in a commercial enterprise, rather than like educators.

Picking winners is an appropriate activity for businesses and industries since their goals are to hire the very best talent in the interests of maximizing productivity and profit. Similarly, competition among rival companies for the pool of available talent is consistent with the very nature of business. But the business model--which has been adopted by most selective institutions--is not appropriate to education. The mission of the college is not simply to maximize its output of distinguished alumni by enrolling as many talented students as possible. Such a static process reduces the college to a kind of funnel: what comes out is purely a matter of what goes in. Colleges and other educational institutions exist in order to change the student, to contribute to personal development, to make a difference.

Another argument frequently advanced in support of selective admissions relates to the criteria used in admissions: test scores and grades. The use of such measures in selecting students is usually defended on the grounds that these measures predict performance in college. And indeed they do (Astin, 1971). The problem here is that the prediction of performance may have little, if anything, to do with whether or not the student learns anything as a result of the college experience. Even if students learned absolutely nothing as a result of going to college, these tests would have the same predictive "validity." Thus, if we could administer college admissions tests to high school seniors, put them in a state of suspended animation for four years, then revive them and give them a set of final examinations, the college admissions tests would still have "validity" in predicting performance on final examinations. The point here is that the predictive validity of college admissions tests and high school grades may be, to a large extent, irrelevant to the educational process.

Perhaps the most important hidden assumption underlying the prediction argument is that the student's grade-point average is a reflection of what has been learned. Indeed, the concept of "flunking out" students is based on the assumption that those who get low grades are not "profitting" from their educationa experience. There is little evidence to support this assumption, and some recent evidence actually contradicts it.* Thus, in terms of gains on the College Level Examination Program (CLEP), students who get failing or near-failing grades show gains that are comparable to those shown by students with high grades. Similarly, in a recent study of the open admissions program at the City University of New York** students with initially low levels of reading competency showed gains in reading skill that were comparable to gains shown by the students with initially high scores. These findings suggest that students at all levels on the ability spectrum are capable of profitting from higher education, and that admissions test scores and grades in college may not be an accurate reflection of what a student can learn or has learned.

Still another argument used to support a hierarchical admissions policy focuses on the "selecting and sorting" function of colleges. By excluding the less able people at the point of admissions, the selective public universities can be reasonably sure that the products they turn out four years later will be of reasonably high quality. Flunking out those admitted students who later perform poorly provides added insurance of the high calibre of the graduates. The more stringent the initial selection

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*John Harris, "Gain Scores on the CLEP-General Examinations and an Overview of Research," paper presented at the annual meeting of the American Educational Research Association, Minneapolis, March 1970.

**Jack E. Rossmann, Helen S. Astin, Alexander W. Astin, and Elaine H. El-Khawas, Open Admissions at City University of New York: An Analysis of the First Year, Prentice Hall, 1975.

criteria, and the more severe the grading practices that are applied to those who are admitted, the higher the quality of the product at the other end.

Graduate and professional schools and employers have come to rely heavily on the hierarchical system to perform this sorting and selecting function. If the criteria used by the selective universities are stringent enough, a prospective employer or graduate school can virtually ignore other information about the candidate and be reasonably confident that the candidate will be bright and highly motivated. That such a selecting and sorting function has proved to be useful is difficult to argue. What has not been considered, I think, is how the college's educational function is affected when it also accepts responsibility for selecting and sorting. For example, when a college fails to admit a student or when it chooses to discharge a student whose grades are poor, the possibility of having any further educational impact on the student is precluded. By selectively screening out the lower-performing student, the institution is implicitly taking the position that the education of these students is not a worthwhile enterprise.

A more telling argument against institutional selecting and sorting is that these functions can probably be performed better by the employers and graduate schools. What really matters to these consumers is the candidate's level of competency at the time of graduation. Note that reliance on undergraduate admissions criteria (as reflected in the hierarchical arrangement of institutions) freezes students in their relative order of performance at the time of graduation from high school. Not only is such information outdated and therefore of dubious value to the employer or graduate school, but it also penalizes the "late bloomer" and gives an unfair advantage to those students whose initially high performance in high

school goes downhill during the college years. As long as there is sufficient information available at the time of college graduation (e.g., through interviews, recommendations, performance on Graduate Record Examinations, and so forth), undergraduate admissions information that is four years old would seem to be of limited value and possibly even misleading. In short, it seems that the "selecting and sorting" function of undergraduate institutions is of limited value either to employers or to graduate and professional schools.

Perhaps the most important single justification for hierarchical public systems is economic: in the minds of many legislators and planners, the two-year college is an appealing way to expand access because it is much less expensive than other institutional forms. At the same time, expanding the community college sector gains support from the more selective universities because it allows them to preserve their selectivity and prestige and to avoid the pedagogical difficulties associated with teaching less well prepared students.

The pressure to build more commuter institutions, particularly two-year or community colleges, presents a special dilemma to the educational planner and policy maker. Commuter institutions presumably provide relatively low-cost, easy access, higher education for residents in a particular geographic region. Members of the community can attend these colleges for relatively little money and with relatively little interference in their every day activities. Student convenience is further enhanced because many institutions schedule classes during the late afternoon and evening hours, an arrangement that permits people to hold full-time jobs and also to attend college full-time. But one pays a certain price for such easy access to postsecondary education. By minimizing the disruption in the student's outside life, involvement in the educational process

is likewide decreased. Students merely have to show up on campus for a hour or so to attend classes and find some time at home to complete assignments and study for examinations. There are no peers to interact with during meals or in the evening, no encouragement to participate in extracurricular activities, and often no campus of the type found at residential institutions. This lack of a collegiate experience is perhaps of minor importance to the so-called nontraditional students: those who are married, older, or attending part-time. However, for the traditional student--the 18 year old who has just completed high school and is pursuing a baccalaureate on a full-time basis--being deprived of a collegiate experience and attending a commuter institution with limited educational resources may not be the ideal undergraduate education. Such institutions clearly do not represent an "educational opportunity" which is "equal" to what one finds in the residential universities and colleges.

It is important to stress that a great many students would simply not attend college if it were not for commuter colleges. They have, in other words, served to "expand access" to a large segment of the society that otherwise would not attend college. The real question is whether educators and policy makers will be content to perpetuate differential admissions policies that leave many students with no alternative but the community college, and whether they are prepared to reexamine the current pattern of resource allocation that favors other institutional types by so great a margin.

Institutional Systems and Institutional Goals

Mounting an effective challenge to selective admissions or devising alternatives to the hierarchical system of institutions is especially difficult because we lack a real consensus as to the goals of higher

education. While defining the goals of higher education is a formidable task that has bewildered many a conference, I should like to propose as a beginning an approach based on the "value added" concept. To begin with, let us assume that the major purpose of public systems of higher education is to improve the performance of the individual. To simplify the argument, we shall take "performance" to mean intellectual competency, but the argument could easily be extended to include competencies other than the purely cognitive skills (these might include artistic talents, skill in leadership, athletic ability, and so forth). Let me try to illustrate this approach with a few charts.

To begin with, let us assume that the first curve at the top of Figure 1 (Figure 1-A) represents the distribution of intellectual performance for the total population of potential students that could be served by the public system. (I have made the distribution "normal" in shape, but there is no necessary reason why the actual distribution of raw scores in the population could not assume some other shape.) Two major cutting points on this score distribution have been identified: "borderline literacy," at the low end of the continuum, and "Ph.D.-level performance," at the high end. Note that only a very small fraction of the population is performing at the Ph.D.-level prior to entering college but that a substantial proportion is performing at or below borderline literacy (the cross-hatched areas of the distribution above and below these two points are arbitrary; they have been drawn as shown simply for illustrative purposes). The desired educational output--the goals of the higher educational system, if you will--can be specified in terms of changes in the characteristics of the distribution.

Although an almost infinite number of such changes might be desired, Figures 1-B, 1-C, and 1-D are examples of only three basic types of changes.

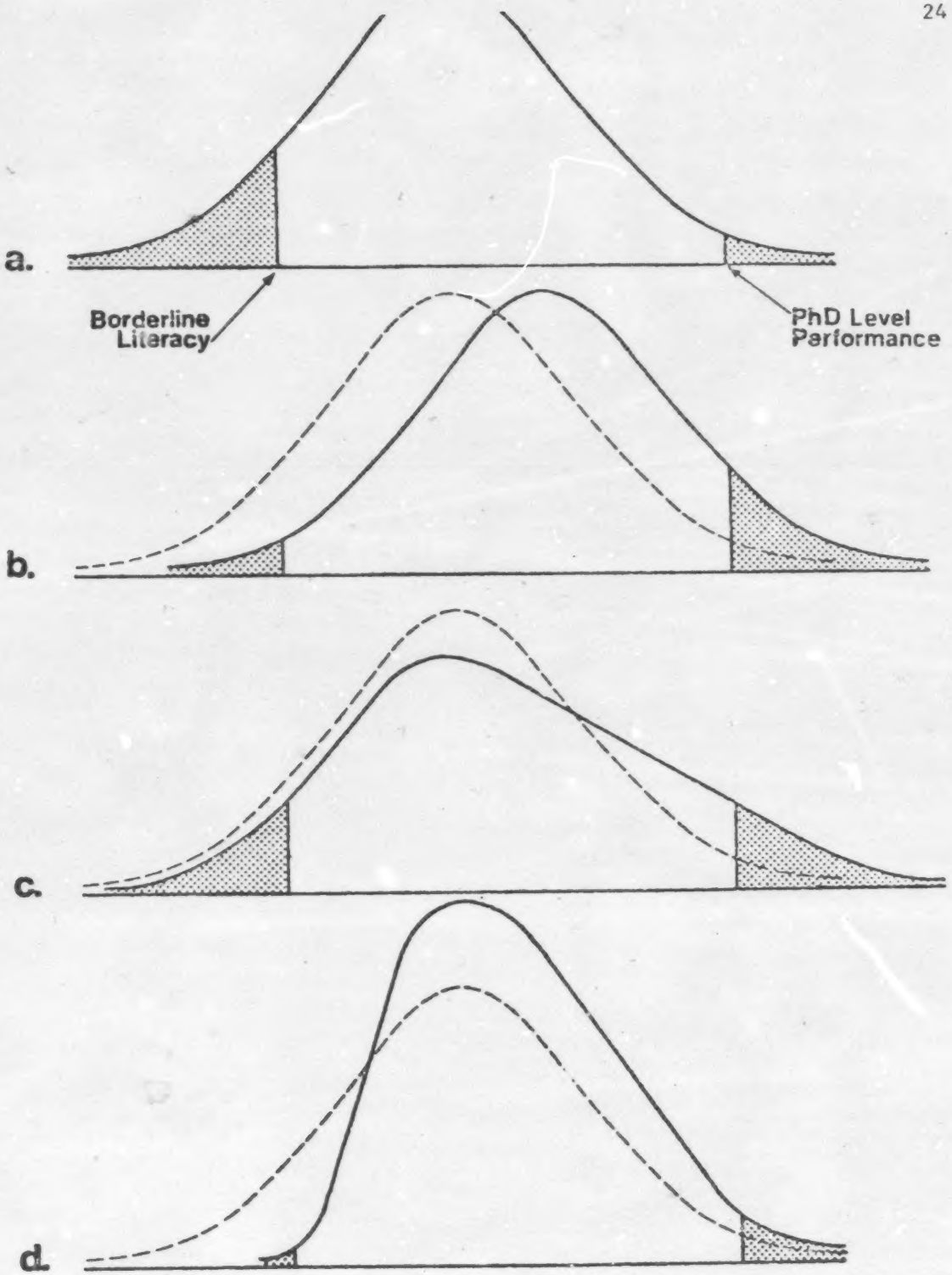

Figure 1: Hypothetical distribution of intellectual ability in the population of entering college students (a), and three possible goals of the higher educational system expressed in terms of changes in the shape of the distribution (b, c, d). (Originally presented in Astin, A. W., "Measuring Student Outputs in Higher Education," from The Outputs of Higher Education: Their Identification, Measurement, and Evaluation, Western Interstate Commission for Higher Education, July 1970, pp. 75-83).

The solid lines in each of these latter three figures show the desired shape of the distribution after four years of college (the educational objective); the dotted line which is superimposed on each figures shows the same distribution as Figure 1-A: i.e., the potential population before it is exposed to college. The first of these hypothetical changes in the performance distribution (Figure 1-B) involves an upward shift in mean performance only. Note that the population as a whole has improved its performance and that the shape or dispersion of people remains unchanged. One might refer to this as a sort of "democratic" or "egalitarian" plan. In order to implement this plan, it would probably be necessary to make an equivalent educational investment in all members of the potential population. Obviously, if certain individuals are given a watered-down education or excluded from the system altogether, it would be unrealistic to expect them to show improvements in performance. We do not know enough at this point to say if equal increments could be achieved more economically by means of a track system rather than some other type of institutional arrangement, but at least there would have to be some attempt to provide equivalent educational opportunities to every member of the population.

The next alternative educational outcome is portrayed in Figure 1-C. Here the proportion of students performing at or near the Ph.D.-level has been substantially increased, while the scores of those at the lowest part of the distribution remain almost unchanged. This type of plan, which is concerned primarily with maximizing the number of very high-performing students, might be characterized as "elitist," in the sense that the greatest share of the resources would be invested in those who are initially high performers. In an elitist system, there is relatively little concern with improving performance on the lowest end of the continuum. This

particular type of educational plan is implicit in the American higher educational system, and even more so in the higher educational systems of Western Europe. Note that it is not necessary to invest significantly in people at the lowest end of the distribution in order to implement this particular plan.

The third alternative outcome, shown in the last curve of the figure (Figure 1-D), is concerned primarily with minimizing the proportion of low performers. Here the number of persons performing at or near borderline literacy is greatly reduced, but the number of performers at the high end of the distribution changes only slightly. Since it is concerned primarily with eradicating illiteracy, this approach might be labeled a "remedial" plan or possibly a "social welfare" plan. To implement this last plan, it would be necessary not only to admit the low performers into some form of postsecondary education, but also to invest a disproportionate amount of the higher educational resources in their education. This type of resource allocation is, of course, precisely the reversal of what is done now: The highly selective institutions currently spend substantially more per student than do the less selective ones.

In addition to changes in the average performance of people in the population, each of the three alternative models has contrasting effects on the variation in performance within the population. Note that in the elitist model, exclusion of low performing people from the system and massive investment of resources in the education of exceptionally high performers will tend to increase variability. The remedial model, which calls for investing proportionately more of our resources in educating the lowest-performing individuals, will tend to have the opposite effect and therefore decrease variability. It would be interesting to speculate on how such alternative schemes will differentially affect societal problems.

Some advocates of the elitist plan for higher education would argue that it is essential to invest a disproportionate amount of our resources in the education of the exceptionally bright in order to promote scientific and technological progress. Some of my elitist friends have referred to this approach as the "Let's not lose the Third World War" plan. Advocates of the remedial or social welfare plan, on the other hand, might argue that the lowest-performing members of the society represent the biggest drain on the society and, in the long run, the biggest threat to the general welfare of the society. According to this argument, substantially improving the competence of these lowest performers might ultimately have enormous societal benefits by alleviating poverty, crime, and similar social problems.

In short, the three alternative models (B, C, and D of the figure) pose some interesting questions of value for educational planners. Does a given increment in performance at the high end of the distribution have the same value to the society as an equal increment in performance at the low end of the distribution? And what about increments in the middle ranges of the distribution? Of what personal value are given increments to the individuals themselves?

Conclusion

It is important to recognize that the issues of admissions and access cannot be resolved without a more careful consideration of the desired objectives of the higher educational system: Should we strive for outcomes that are egalitarian, elitist, remedial, or what? What are the long-term implications of these various types of objectives for the society?

Regardless of what our objectives might be, the existing hierarchical public systems do not present a set of opportunities that are even remotely

"equal" for all students.

Perhaps the biggest obstacle to change is that most people in policy-making positions like these hierarchical systems the way they are. Meritocratic values are so deeply entrenched in our social and educational thinking that most of us are inclined to take for granted the elitist nature of our institutional structure. If nothing else, let us hope that these deliberations will serve to convince some policy-makers that hierarchical systems based on selective admissions are neither inevitable nor necessarily even rational, and that alternative systems are possible.

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